Claims

1. A method of manufacturing and laying a plurality of elongate elements into an umbilical having a core element, a plurality of metal conduits and at least one cable situated outside the core element, said core element being advanced along a feed line said conduits and cables being fed onto the outside of the core element and laid in a helix, said method comprising the steps of:

providing a first group of single lengths of metal tubes forming said conduits, parallel one to another, so as to advance said single lengths in the direction of said feed line;

providing a second group of single lengths of metal tubes, parallel one to another, so as to advance said lengths of said second group in the direction of said feed line;

welding said first ends of said lengths of said second group to said second end of said lengths of said first group;

providing further groups of single lengths of metal tubes and welding said further groups to the lengths of the foregoing group respectively such that the metal tubes, welded together, are laid to the outside of said core element in the form of a helix in the same working step in which they are welded together;

advancing said single lengths of each group into a receptacle having a tube like form; and

moving said receptacle into said feed line and taking up said core element.

2. Method according to claim 1, further comprising the step of employing a first and a second receptacle, the first receptacle being in the feed line and the second receptacle being parallel thereto, beneath the feed line;

loading said single lengths to said second receptacle while at least one group of said single lengths are removed from said first receptacle.

3. Method according to claim 1, wherein each said receptacle has a tube like form, said method further comprising the step of feeding said single lengths into said tube like forms at a high velocity.

4. Method according to claim 1, further comprising the step of housing more than one group of said single lengths in each receptacle.

5. Method according to claim 1, wherein each said group contains more than one tube size according to the cable design.

6. Method according to claim 1, further comprising the step of giving a unique number to each tube by barcode marking and automatically checking said unique number by a machine computer system against a list of correct numbers before welding.

7. Method according to claim 1, further comprising the step of moving said receptacles either sidewards or turned around an axis parallel to the feed line.

8. Method according to claim 1, further comprising the step of welding by means of a travelling welding unit the group of single lengths, taken from the receptacle, being in the feed line, to the former group(s) of lengths which are in the process of being laid to the outside of the core element.

9. Method according to claim 1, further comprising the step of turning the receptacle around its central axis so as to helically lay said metal tubes to the outside of said core element.

10. Method according to claim 1, further comprising the step of testing the welded joints immediately after the welding in the same working step.

11. Method according to claim 1, further comprising the steps of laying the metal tubes to the outside of said core element with spaces between them and, laying said cables into said spaces between said metal tubes.

12. Method according to claim 1, wherein the welding of said metal tubes is preformed immediately before they are laid to the outside of said core element.

13. Method according to claim 1, further comprising the step of laying filler elements into the spaces between said metal tubes and/or said cables.

14. Method according to claim 1, winding a tape to the layer comprising of metal tubes, cables and, if needed, filler elements and applying a layer of bituminous material and winding at last a threadlike element onto said layer of bituminous material.

15. Method according to claim 1, further comprising the step of turning, around its longitudinal axis, the receptacle, to which the single lengths are loaded after the loading of a single length.

16. Method according to claim 1, further comprising the step of applying a sheath of thermoplastic material to said metal tubes.

17. Method according to claim 16, further comprising the step of leap-proofing said metal tubes prior to applying said sheath.